

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/003589

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.⁷ C12N1/19, 15/09, C12P7/62

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl.⁷ C12N1/19, 15/09, C12P7/62

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CA/BIOSIS/MEDLINE/WPIDS (STN), PubMed

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
$\frac{X}{Y}$	M. OHKUMA et al., Cloning of the C-URA3 gene and construction of a triple auxotroph (his5, adel, ura3) as a useful host for the genetic engineering of Candida maltosa., Curr.Genet. (1993), Vol.23, No.3, pages 205 to 210	$\frac{1, 7-11}{17-19}$
$\frac{X}{Y}$	JP 2002-209574 A (Kaneka Corp.), 30 July, 2002 (30.07.02), & WO 02/057442 A1 & EP 1352958 A1	$\frac{1, 7-11, 17-19}{17-19}$
A	E. ALANI et al., A method for gene disruption that allows repeated use of URA3 selection in the construction of multiply disrupted yeast strains., Genetics (1987), Vol.116, No.4, pages 541 to 545	1, 7-11, 17-19

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

- A- document defining the general state of the art which is not considered to be of particular relevance
- E- earlier application or patent but published on or after the international filing date
- L- document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- O- document referring to an oral disclosure, use, exhibition or other means
- P- document published prior to the international filing date but later than the priority date claimed

- T- later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- X- document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- Y- document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- &- document member of the same patent family

Date of the actual completion of the international search
21 June, 2005 (21.06.05)Date of mailing of the international search report
12 July, 2005 (12.07.05)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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Box No. II

Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III

Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The inventions as set forth in claims 1 to 19 relate to a yeast with gene disruption; the inventions as set forth in claims 20 to 33 relate to a yeast transformant having polyhydroxyalkanoic acid synthase gene and acetoacetyl CoA reductase gene transferred thereinto; and the inventions as set forth in claims 34 to 36 relate to a method of restoring a selection marker. Namely, there is no special technical matter in the meaning within PCT Rule 13.2 common to all claims and, therefore, it is recognized that the inventions as set forth in claims 1 to 36 consist of three invention groups, i.e., the inventions as set forth in claims 1 to 19, the inventions as set forth in claims 20 to 33 and the inventions as set forth in claims (continued to extra sheet)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

The inventions as set forth in Claims 1 and 11 and the parts relating to claim 1 in claims 7 to 10 and 17 to 19.

Remark on Protest

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The additional search fees were accompanied by the applicant's protest.

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No protest accompanied the payment of additional search fees.

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Continuation of Eox No. III of continuation of first sheet (2)

34 to 36. The matter common to the inventions as set forth in claims 1 to 19 resides in "an auxotrophic yeast with gene disruption in which chromosomal DNA genes have been disrupted by homologous recombination with DNA fragments". However, an adenine-requiring yeast with the disruption of chromosomal DNA ADE1 gene by homologous recombination with an ADE1 DNA fragment is reported in document 1 (JP 2002-209574A, KANEGAFUCHI CHEM IND CO., LTD. 2002.07.30 & WO 02/057442 A1 & EP 1352958 A1). Therefore, the above common matter falls within the category of prior art and cannot be considered as a special technical feature in the meaning within PCT Rule 13.2. Thus, it is recognized that the inventions as set forth in claims 1 to 19 consist of six groups of inventions. There is no matter common to the inventions as set forth in claims 1 to 36 seemingly being a special technical feature in the meaning within PCT Rule 13.2. and it cannot be considered that the above invention groups are so linked as to form a single general inventive concept. Such being the case, claims 1 to 36 have eight groups of inventions.